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WASHINGTON, D.C.

July, 1940.

Accidents.

How a coordinated attack can help control accidents resulting from slips and falls. By Cyril Ainsworth. Industrial standardization. v.11,no.5. May, 1940. p.128-133.
Unprotected floor and wall openings, faulty ladders, bad house-keeping, slippery floor surfaces, are some outstanding causes for bad record marked up for slips and falls in industrial accident statistics. ASA committees are now working on safety codes to help control these accident causes.

Agriculture.

Agricultural experiment station of the University of Kentucky fifty-second annual report for the year 1939. Part I. Lexington, Ky. [1940] 63p.

Agricultural resources of Minnesota. St. Paul, Minn., Minnesota resources commission, 1940. 13p.

Annual report for the fiscal year ending, June 30, 1939. Agricultural experiment station, University of Florida. Gainesville, Fla., 1940. 195p.

Annual report for the fiscal year ending November 30, 1939. Amherst, Mass., 1940. 104p. Massachusetts agricultural experiment station. Bulletin no.369.

Annual report of the director for the fiscal year ending June 30, 1939. Newark, Del., 1939. 43p. University of Delaware. Agricultural experiment station. Bulletin no.220.

California's 1939 farm income review. By Donald L. Kieffer. Pacific rural press. v.139,no.2. January 27, 1940. p.30. Table 1. Production and farm value of fruit and nut crops in California for 1938, and preliminary estimates for 1939. Table 2. Total farm income for California. Table 3. Field crops--production and value.

Cooperative approach to rural electrification education and research. By C. J. Hurd. Rural electrification news. v.5,no.9. May, 1940. p.5-8.

Agriculture. (Cont'd).

Farm operating efficiency investigations in Virginia, 1931-1938.
By A. T. Holman, J. L. Maxton and G. D. Kite. Washington,
U.S. Bureau of agricultural chemistry and engineering, 1940.
57p. mimeographed. Progress report.

Job that lies ahead is a big one. By Allen W. Manchester.
New Jersey farm and garden. v.11,no.5. May, 1940.
p.6-7,35. Discusses some of much debated questions
involved in federal farm program.

Ohio agricultural statistics, 1938. By G. S. Ray, O. M. Frost
and P. P. Wallrabenstein. Wooster, Ohio, 1940. 64p.
Ohio agricultural experiment station. Bulletin no.612.

Organization for agricultural research and problems under investi-
gation; forty-fifth annual report of the Montana agricultural
experiment station July 1, 1937 to June 30, 1938. Bozeman,
Montana, Montana state college, n.d. 61p.

Planning a subsistence homestead. By W. W. Wilcox. Washington,
U.S. Govt.print.off., 1940. 20p. U.S. Department of agri-
culture. Farmers' bulletin no.1733.

Simple method for the construction and operation of numerous gravel
culture experimental plots. By D. C. Kiplinger and Alex Laurie.
In Bimonthly bulletin. v.25,no.203. Wooster, Ohio,
Ohio agricultural experiment station, 1940. p.55-58.

University of Puerto Rico agricultural experiment station. Annual
report for the fiscal year, 1938-1939. Rio Piedras, Puerto
Rico, [1940] 102p.

Air Conditioning.

Dynamic and thermal behavior of water drops in evaporative cooling
processes. By H. B. Nottage and L. M. K. Boelter. Part 2.
Heating, piping and air conditioning. v.12,no.5.
May, 1940. p.326-332.

Effects of air conditions on farm products being studied by
numerous agencies. Heating and ventilating. v.36,no.11.
November, 1939. p.51-55. It may be only few years
until there will be wide application of air conditioning of one
kind or another for maintaining best environment for plants,
cows, poultry, and other agricultural products. Here is brief
review to indicate that many problems along these lines are
already past research stage and await only actual application.

Gilchrist air conditioning chart for solving air mixture problems.
By Francis G. Gilchrist. Heating and ventilating.
v.36,no.11. November, 1939. p.44-47. Accompanying

Air Conditioning. (Cont'd).

psychrometric chart, substitutes single point for what is straight line on conventional psychrometric chart. As result, Gilchrist chart is much simplified and provides space for inclusion of data not usually provided.

Psychrometric chart: its application and theory. By William Goodman. Heating, piping, and air conditioning. v.12,no.5. May, 1940. p.303-305. Shows how the various equations presented in text are derived.

Alcohol Fuel.

Power alcohol from farm products: its chemistry, engineering and economics. By Geoffrey Shepherd and others. Ames, Iowa, 1940. 375p. Iowa corn research institute. Contributions. v.1,no.3. June, 1940.

Riding with Alky-gas. By Bruce Griffing. Iowa agriculturist. v.40,no.9. April, 1940. p.2-3. Test results establishing the superiority of corn alcohol-gasoline mixtures as motor fuels indicate that alky-gas production may soon absorb millions of bushels of surplus corn.

Barns.

One-story dairy barn. By S. A. Witzel. Hoard's dairyman. v.85,no.6. March 25, 1940. p.183,205.

Belts.

How to select and maintain rubber belts. By James Adams, Jr. Power. v.84,no.3. March, 1940. p.150-152. Practical hints on construction, application and care of flat-rubber and multiple V-belts.

Brooders, Electric.

Warm the pigs with electricity. Washington farmer. v.65,no.7. March 28, 1940. p.8. Gives plan of electric pig brooder.

Building Construction.

Contract documents for small house construction. Washington, U.S. Govt.print.off., 1938. 16p. Federal housing administration. Technical bulletin no.3. Revised Feb. 1, 1938.

Fatigue provisions in riveted joints. By Jonathan Jones. Civil engineering. v.10,no.6. June, 1940. p.344-345. Review of present knowledge, and limitations in its application.

Building Construction. (Cont'd).

Improved machine shows different forms of failure of clay bodies in torsion. By R. P. Graham and J. D. Sullivan.
Columbus, Ohio, Battelle Memorial institute, 1939.
p.97-100. Reprinted from the Bulletin of the American ceramic society. v.18,no.3. March, 1939.

Modern design. Washington, U.S. Govt.print.off., 1938.
10p. Federal housing administration. Technical bulletin no.2.

Procedures for operative builders. Washington, U.S. Govt. print.off., 1938. 20p. Federal housing administration. Circular no.4.

Rat and ratproof construction of buildings. By B. E. Holsendorf. Washington, U.S. Govt.print.off., 1937. 68p.
"References":p.67-68. U.S. Public health reports. Supplement no.131.

Simplified wind-stress analysis of tall buildings: discussion. By Otto Gottschalk. American society of civil engineers. Proceedings. v.66,no.4,part 1. April, 1940.
p.651-665.

Strengthening of structures. By F. F. Binswanger. Structural engineer. v.18,no.3. March, 1940. p.553-557.
Paper does not give complete study of question of strengthening of structures, but more to describe some cases which have occurred.

Structural application of glue in framing farm buildings. By Henry Giese. Agricultural engineering. v.21,no.2. February, 1940. p.47-50.

Building Materials.

How statistics help the engineer control quality of product. By John Gaillard. Industrial standardization. v.11,no.5. May, 1940. p.109-118.

Improved sampler and sampling technique for cohesionless materials. By H. L. Johnson. Civil engineering. v.10,no.6. June, 1940. p.346-348. Description of equipment and methods developed and used for the first time on Denison Dam and Reservoir project.

New products from wood. By James A. Lee. Chemical and metallurgical engineering. v.47,no.2. February, 1940. p.95-98. Masonite has developed method for recovery for furfural, acetic and formic acids. Carbon of highest degree of hardness and density is produced in various shapes and sizes. Molded plastic containers are to be made. Screw press eliminates

Building Materials. (Cont'd).

washing of fibrous material. Masonite process is based on method of exploding wood into fibers and of welding these fibers into dense substance with assistance of natural binder, lignin.

Revival of wood as a building material. By Don Taylor.
Architectural record. v.86,no.6. December, 1939.
p.63-72.

Steel on the farm. Farmer's digest. v.3,no.12.
April, 1940. p.65-68.

Chemistry, Technical.

Chemical industry and the economic system. By Harold G. Moulton.
Scientific monthly. v.49,no.3. September, 1939.
p.197-203.

Chemurgy finds new uses for farm crops. Oregon farmer.
v.63,no.8. April 11, 1940. p.20.

New wonders of agriculture. Popular mechanics magazine.
v.73,no.6. June, 1940. p.801-803,147A,149A.

Nylon. Fortune. v.22,no.1. July, 1940.
p.56-60,114,116.

What chemistry is doing to us and for us. By Robert E. Burk.
Scientific monthly. v.49,no.6. December, 1939.
p.491-503.

Colorado River.

Development of the Colorado River in the Upper Basin: discussion.
By Thomas C. Adams. American society of civil engineers.
Proceedings. v.66,no.6,pt.1. June, 1940. p.1079-1084.

Concrete.

Recommended practice and standard specifications for concrete and reinforced concrete. American society of civil engineers.
Proceedings. v.66,no.6,pt.2. June, 1940. 122p.
Joint report of a committee comprizing representatives of American society of civil engineers, American society for testing materials, Portland Cement association, American concrete institute, American railway engineering association, American institute of architects.

Conservation of Resources.

Some economic and social implications of the soil and water conservation program in the Little Mill Creek watershed, Coshocton county, Ohio. By R. H. Blosser. Columbus, Ohio, 1940. 36p. mimeographed. Ohio state university. Department of rural economics. Mimeograph bulletin no.128.

Corrosion.

Corrosion--the structural "common cold". By Enoch R. Needles. Civil engineering. v.10,no.7. July, 1940. p.405-407.

Corrosion in steam heating systems. By Leo F. Collins and Everette L. Henderson. Heating, piping and air conditioning. v.12,no.4. April, 1940. p.243-246.

Corrosion in steam heating systems. By Leo F. Collins and Everette L. Henderson. Heating, piping and air conditioning. v.12,no.5. May, 1940. p.299-302. Paper published last month described in detail water treating scheme that has been developed in large central heating plant to produce steam containing not more than 5 ppm [parts per million] of CO₂ and no oxygen. Operation, control and experience with new method are discussed this month.

Steel corrosion--its nature and prevention. By C. F. Rassweiler. Civil engineering. v.10,no.7. July, 1940. p.407-410. Discusses some of general principles covering what shop coat is supposed to do and mechanism by which some of more common types of shop primers attempt to achieve this objective.

Cotton Gins and Ginning.

Preliminary report 1939-1940. By Chas. A. Bonnett and Francis L. Gordes. Cotton ginner's' journal. v.11,no.10. July, 1940. p.7,13,16.

Utilization of farm products. By W. C. McFarlane. Canadian society of technical agriculturists review. No.25. June, 1940. p.10. Progress report of C.S.T.A. survey of research on utilization of farm products in Canada. Purpose of brief report is to review activities of past winter as background for discussion of final detailed report.

Cotton Machinery.

Cotton-tillage studies on Red Bay sandy loam. By J. W. Randolph, I. F. Reed and E. D. Gordon. Washington, U.S. Govt.print. off., 1940. 54p. "Literature cited":p.54. U.S. Department of agriculture. Circular no.540.

Modern combing machinery. Textile weekly. v.25,no.628. March 15, 1940. p.314. General details of the Noble comb.

Crops (Drying).

Haying in the rain. By S. T. Dexter. Michigan farmer.
v.193,no.10. May 11, 1940. p.5,20.

Natural and artificial drying of hay; selected references.
Compiled by J. W. Weaver, Jr. Knoxville, Tenn.,
Agricultural engineering development division, Commerce depart-
ment, Tennessee valley authority, 1940. 43p. mimeographed.

Dams.

Building an earth dam. By Roy E. McFee. Rural New-Yorker.
v.99,no.5474. April 6, 1940. p.227.

Design of Hiwassee Dam--basic considerations. By Cecil E. Pearce.
Civil engineering. v.10,no.6. June, 1940. p.340-343.
In very southwest corner of North Carolina is Hiwassee Dam,
straight gravity structure over 300 ft high and almost 1,300
ft at crest, now nearing completion. On tributary of Tennessee
up in Great Smokies, it provides river storage for Tennessee
Valley, as well as power. By making special provisions for
foundation drainage and grouting, it proved feasible to dis-
pense with cutoff. Based on hydraulic studies, spillway was
given capacity of 130,000-cu ft per sec, supplemented by
sluices that provide additional 20,000 cu ft. Features of
general structural and hydraulic design are here described.

Design of Hiwassee Dam--engineering details. By Cecil E. Pearce.
Civil engineering. v.10,no.7. July, 1940. p.433-436.
Confined to those details that differ from previous practice.

Historic Austin Dam rebuilt. By Clarence McDonough. Engineering
news-record. v.124,no.25. June 20, 1940. p.844-847.

Shell material in dams of Miami Conservancy district. By
C. H. Eiffoert. Engineering news-record. v.124,no.25.
June 20, 1940. p.863.

Drainage.

Proper drainage is very important. By Jack Klein. California
cultivator. v.87,no.10. May 18, 1940. p.294.

Dryers and Drying.

Typical problems in drying. By O. A. Hougen. Chemical and
metallurgical engineering. v.47,no.3. March, 1940.
p.160-163. Solutions which have been worked out are
illustrative of recent advances in theory of drying and appli-
cation of drying equations.

Electricity on the Farm.

Rural electrification in Montana. Montana farmer.
v.27,no.13. March 1, 1940. p.11.

Engineering.

Engineering--ancient and modern. By E. H. Hull. Scientific
monthly. v.49,no.5. November, 1939. p.460-463.

Report of the Board of State engineers of the state of Louisiana
from January 1, 1938 to January 1, 1940. New Orleans, La.,
1940. 239p.

Engines.

Some new investigations on old combustion engine problems.--V.
By Ing. G. Eichelberg. Engineering. v.149,no.3871.
March 22, 1940. p.297-299.

Erosion.

Degree and length of land slope as it affects soil loss in runoff.
By Austin W. Zingg. Agricultural engineering. v.21,no.2.
February, 1940. p.59-64. Study was initiated to
better evaluate effects of degree and length of land slope
upon soil loss, and to serve as guide for subsequent experi-
mentation which should ultimately lead to precise determina-
tion of these effects. Results of research work by various
individuals and organizations are grouped and analyzed as
whole to develop rational equation for soil loss with respect
to degree and horizontal length of slope. Results of original
experiment involving several plots with variations of slope
and horizontal length are given. It is not assumed that equa-
tion obtained represents absolute values for any specific soil
or condition but is merely average of available data on subject.

Methods of conserving run-off water and controlling soil erosion.
By J. S. Parker, Wm. Dickson and E. S. Hopkins. Canadian
society of technical agriculturists. Review. No.23.
December, 1939. p.71-77. Terracing to conserve run-
off water and prevent soil erosion. Flood irrigation. Contour
furrowing for water conservation on grazing lands. Contour
cropping. Basin listing. Snowfall conservation.

Wind erosion and sand dune control; selected list of references.
Compiled by R. W. Moats. Washington, U.S. Soil conserva-
tion service, 1940. 66p. mimeographed. Soil conserva-
tion bibliography no.1.

Extension.

For better rural living; report of cooperative extension work of
agriculture and home economics in 1938. Washington, U.S.
Govt.print.off., 1940. 45p.

Extension. (Cont'd).

25 years of extension work in Indiana; historical narrative and achievement summary. By H. E. Young. Lafayette, Ind., 1939. Unnumbered pages. Purdue university. Department of agricultural extension.

Farm Buildings.

Investment per cow for housing. Agricultural engineering. v.21,no.2. February, 1940. p.50. From Dairy Husbandry Department of the Nebraska College of Agriculture, housing costs should not exceed 10 per cent of total cost of keeping cow and that less would be very desirable.

Milking parlor for small dairy farms. By K. B. Huff. Hoard's dairyman. v.85,no.5. March 10, 1940. p.145,174. Gives floor plan of general-purpose barn remodeled into a grade B dairy plant by adding 18-ft. shed to provide space for milk handling room and two-cow tandem type milking parlor.

Program for rehabilitating farm buildings. By Wallace Ashby. Washington, U.S. Bureau of agricultural chemistry and engineering, 1940. 5p. mimeographed.

Farm Machinery and Equipment.

Aids for agriculture. By Randall R. Howard. New England homestead. v.113,no.5. March 9, 1940. p.5,18.

Bean growing in northern Idaho, eastern Washington and eastern Oregon. By Byron Hunter. Washington, U.S. Govt.print.off., 1940. 17p. U.S. Department of agriculture. Farmers' bulletin no.1509.

Farm power on parade. California cultivator. v.87,no.6. March 23, 1940. p.159.

Hay crusher speeds up curing. Oregon farmer. v.63,no.12. June 6, 1940. Tests indicate marked gains in quality.

Machinery defended. Implement record. v.37,no.6. June, 1940. p.16. Fowler McCormick tells Federal Investigators that power equipment does not displace farm laborers.

Machinery makes large scale farming possible. By D. J. Whitney. California cultivator. v.87,no.6. March 23, 1940. p.155,167.

Manufacture of agricultural machinery and international trade from 1929 to 1938. By H. J. Hopfen. International institute of agriculture. Monthly bulletin of agricultural science and practice. Year 31,no.3. March, 1940. p.98T-118T.

Farm Machinery and Equipment. (Cont'd).

- Mechanical harvesters in Louisiana. Facts about sugar.
v.35,no.4. April, 1940. p.24-27. Munson
"Windrower" seen as answer to problem of cane cutting by
machine on results in 1939. Another harvester developed
by Commander Wurtele.
- Modern haymaking machinery. By S. J. Wright. Journal of
the Ministry of agriculture. v.46,no.8. March, 1940.
p.743-746.
- Modern machinery aids soybean growers. By G. W. McCuen.
Ohio farmer. v.185,no.5. March 9, 1940. p.10-11.
- Modified mower for leaving high stubble. By Hugh G. Porterfield.
Soil conservation. v.5,no.12. June, 1940. p.306.
- New machine applies carbon bisulphide. Pacific rural press.
v.139,no.2. January 27, 1940. p.31. Developed
by division of agricultural engineering of University of Cali-
fornia. Working in cooperation with commercial concern, they
rigged up pump on heavy duty field chisel cultivator with 1/4
inch tubes to discharge carbon bisulfide under ground as chisel
moved along. Pumps were driven by chain drive from ground
wheels at speed that permits pumps to discharge once for every
18 inches of forward travel. Two supply tanks of carbon bisul-
fide of 25 gallons each are mounted slightly ahead of power
lift axle to balance up load on chisel frame. Roller was
pulled behind chisel to seal up surface so that gas generated
from carbon bisulfide could not escape. About six 50 gallon
drums of carbon bisulfide will completely treat an acre. With
this power applicator, treatment can be made at rate of about
one-half acre per hour.
- New machines for Ohio farmers. By Harry G. Davis. Ohio
farmer. v.185,no.6. March 23, 1940. p.5,19.
- New machines lower beet labor cost. By M. N. Boeler.
Capper's farmer. v.51,no.5. May, 1940. p.17.
- Orchard disk especially suited to contour planting. By Henry
Clay Lint. Soil conservation. v.5,no.12.
June, 1940. p.304-305.
- Problems in harvesting malting barley. By A. J. Schwantes.
Agricultural engineering. v.21,no.2. February, 1940.
p.56.
- Small tractors, combines push down 1939 dollar volume. By Charles T.
Post. Implement record. v.37,no.3. March, 1940.
p.10.

Farm Machinery and Equipment. (Cont'd).

Specifications of combined harvester-threshers. Farm implement news. v.61,no.9. May 2, 1940. p.37-40.

Taking the bugs out of beet harvesting. Implement record. v.37,no.3. March, 1940. p.8-9,56.

Tillage equipment for weed control. By A. J. Schwantes. Northwest farm equipment journal. v.54,no.5. May, 1940. p.28.

Tillage tools for sugar cane. Implement and machinery review. v.66,no.781. May 1, 1940. p.60-63.

Farmhouses.

Big three of modern farm house design. By H. E. Wichors. Hoard's dairyman. v.85,no.6. March 25, 1940. p.184,186.

Low cost farm homes. Hoard's dairyman. v.85,no.6. March 25, 1940. p.191.

Private utilities for rural homes. Architectural forum. v.71,no.6. December, 1939. p.469-472.

Fences.

Corners are the foundation for fence; good construction reduces depreciation, increases usefulness. By Henry Giese and Maxton D. Strong. Successful farming. v.38,no.5. May, 1940. p.19,30-31.

Fixing our fence lines. By F. B. Swingle. Wisconsin agriculturist and farmer. v.67,no.9. May 4, 1940. p.5,22-23.

Hints on how to stretch a fence. By Eugene Wyble. Pennsylvania farmer. v.122,no.4. February 24, 1940. p.18-19. Sketch illustrates how to roll barb wire so it will not tangle. Upright diagram shows how each strand weaves across roll. Lower diagram shows roll of wire and path it follows when being wound.

Fences, Electric.

Code regulations for the electric fence. By F. W. Duffee. Agricultural engineering. v.21,no.2. February, 1940. p.51-55.

Electric fence. By H. F. Agnew and W. C. Place. Farmer's digest. v.4,no.1. May, 1940. p.50-54.

Fences, Electric. (Cont'd).

Safety with electric fence. Ohio farmer. v.185,no.9.
May 4, 1940. p.25.

Fertilizers.

Fertilizer experiments with rice in California. By L. L. Davis
and J. W. Jones. Washington, U.S. Govt.print.off., 1940.
22p. U.S. Department of agriculture. Technical bulletin
no.718.

Fire Protection.

Be ready to fight farm fires. Idaho farmer. v.58,no.11.
May 23, 1940. p.282.

Organizing to prevent fires. By Percy Bugbee. American water
works association. Journal. v.32,no.6. June, 1940.
p.987-992.

R.F.D. fireman. By John Schmidt. Country home magazine.
v.63,no.12. December, 1939. p.22,24.

Fireplaces.

How to build outdoor fireplaces for parks and recreation areas.
Public works. v.71,no.6. June, 1940. p.13.

Let's have our picnic right here. By Hi Sibley. Better homes
and gardens. v.18,no.11. July, 1940. p.20-21.
Construction details of outdoor fireplaces.

Floods and Flood Control.

Flood-control methods; their physical and economic limitations:
progress report of committee of the hydraulics division on
flood control--discussion. By Charles H. Paul, W. C. Hammatt,
and William P. Creager. American society of civil engineers.
Proceedings. v.66,no.6,pt.1. June, 1940. p.1194-1198.

Flood-protection data; progress report of the committee: discussion.
By Waldo E. Smith. American society of civil engineers.
Proceedings. v.66,no.6,pt.1. June, 1940. p.1225-1228.

Grouped reservoirs control floods. By Clarence McDonough.
Engineering news-record. v.124,no.23. June 6, 1940.
p.793-796. Floods that annually have damaged city prop-
erty and downstream agricultural lands are being placed under
control by four dams on Colorado River above Austin, Texas.
With flood storage capacity of about 3,000,000 acre-feet these
dams also provide 147,000 kva electric power, which, with sale
of irrigation water, will amortize cost of \$48,000,000.

Floods and Flood Control. (Cont'd).

Transient flood peaks: discussion. By Walter J. Wood and Maxwell F. Burke. American society of civil engineers. Proceedings. v.66,no.6,pt.1. June, 1940. p.1104-1108.

Floors.

Concrete floors for farm corrals. By Henry J. Beckman. California cultivator. v.87,no.6. March 23, 1940. p.181-182.

Floors for farm buildings. By C. H. Christopherson. Hoard's dairyman. v.85,no.6. March 25, 1940. p.186.

Flow of Water and Gases.

Investigation of the discharge and coefficients of small circular orifices. By F. W. Medaugh and G. D. Johnson. Civil engineering. v.10,no.7. July, 1940. p.422-424. Explain method of construction, and describe in considerable detail their calibration tests. Table of coefficients for wide range of heads, for orifices varying in diameter from 0.25 to 4.00 in., is presented, and authors conclude that other experimenters using same method of making plates should obtain coefficients within one-third of 1 per cent of those given.

Stream flow in Ohio for 1939. By Tate Dalrymple. Ohio state university. Engineering experiment station news. v.12,no.2. April, 1940. p.28-30.

Foods.

Proximate composition of American food materials. By Charlotte Chatfield and Georgian Adams. Washington, D.C., 1940. 91p. "Literature cited":p.91.

Foundations.

Design of pile foundations using piles of varied lengths. By Harry E. Eckles. Engineering news-record. v.124,no.25. June 20, 1940. p.862-863.

Foundation experiences, Tennessee Valley Authority: a symposium: discussion. By George K. Leonard and F. B. Marsh. American society of civil engineers. Proceedings. v.66,no.5. May, 1940. p.980-983.

How to build waterproof foundations with clay products. Brick and clay record. v.96,no.4. April, 1940. p.31.

Frost Protection.

Sub-zero frost protection. By Allan K. Grimmer. Water works engineering. v.93,no.1. January 3, 1940. p.14-16.
Heating of soil by electric cable buried in ground protects services and mains from freezing at -60° .

Garden Walks.

Garden steps and how to make them. American home. v.23,no.5. April, 1940. p.37-38,128-130.

Grain Storage.

Corncrib "Hangar" of slotted steel holds 1,000 bushels. Popular mechanics magazine. v.73,no.5. May, 1940. p.727.
On state experimental farm at Ames, Ia., there is steel corncrib somewhat resembling airplane hangar on stilts. It was scientifically designed to store crop safe from humidity and from rats, and it has even been arranged for fumigation to rid corn of insects. There is door at one end, and removable hopper-bottom slats. Sides are of perforated steel slats, and there are ventilators also in bottom and in roof to combat moisture. Crib is built eighteen inches above ground to assure air circulation and to keep out rats.

Small low cost concrete grain bin. By G. B. Hanson. Agricultural engineering. v.21,no.2. February, 1940. p.65,68. Gives construction details of 1000-bu reinforced concrete grain bin with flat wood and paper roof.

Heat Transmission.

Estimating heat flow through sunlit walls. By C. O. Mackey and L. T. Wright, Jr. Heating and ventilating. v.37,no.4. April, 1940. p.29-32. Part 2--Composite walls.

Estimating heat flow through sunlit walls. By C. O. Mackey and L. T. Wright, Jr. Ithaca, N.Y., 1940. [14p.]
Cornell university. Engineering experiment station. Reprint no.9. (Reprinted from Heating and Ventilating. March, April and May, 1940).

Heat gain through glass blocks by solar radiation and transmittance. By F. C. Houghton, David Shore, H. T. Olson and Burt Gunst. Heating, piping and air conditioning. v.12,no.4. April, 1940. p.264-270.

How to reduce sun heat through windows. By Clifford Strock. Heating and ventilating. v.36,no.12. December, 1939. p.35-40. Sun heat transmitted through windows is frequently large part of summer air conditioning load in building. Article shows how this load can be reduced by use of heat absorbing glass and by shading. Tables are included for rapid

Heat Transmission. (Cont'd).

calculation of load through either ordinary or special glass.
Article is confined to single thicknesses of flat window glass.

Heating.

Air infiltration through windows. By E. F. Coleman and R. H. Heald.
Washington, U.S. Govt.print.off., 1940. 21p. "Selected
references":p.21. National bureau of standards. Building
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Pest Control. (Cont'd).

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